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EXAMINER

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/870,517
Filing Date: June 01, 2001
Appellant(s): BUSCHKA ET AL.

MAILED
APR 13 2006
GROUP 1700

Travis D. Boone
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 2/27/06 appealing from the Office action mailed 9/27/05. **(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

3,984,898	Matsumura et al	10-1976
4,018,646	Ruffo et al	4-1977

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4,972,551	Fehrer	11-1990
97/45083	Rosseland	12-1997

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumura et al, U.S. Patent No. 3,984,898 in view of Ruffo et al, U.S. Patent No. 4,018,646 and Fehrer, U.S. Patent No. 4,972,551. Matsumura et al discloses a material comprising short fibers and reinforcing long fibers. The long fibers can be rayon, nylon, polyester or other chemical or synthetic fibers or cotton. The relative proportions of the fibers are within the claimed range. The lengths of the reinforcing fibers are within the claimed range. See col. 1, lines 12-17. The short fibers are generally formed from wood pulp fibers. Matsumura et al discloses a method of making the material comprising a mixture of cellulosic short fibers and reinforcing fibers comprising the steps of forming the reinforcing fibers into a gauze on a wire and then forming the cellulosic fibers into a web and integrating them with the reinforcing fibers to form a fabric. The reinforcing fibers may comprise rayon fibers. Specifically, looking at figure 8 as well as column 8, lines 33-50, Matsumura teaches supplying a carded fiber layer between a feed roll and a feed plate which is defibrated by a lickerin roll. The individual long fibers are blown downwardly by an air flow emanating from an air knife and are drawn downwardly and are pulled onto the endless wire to form a thin long fiber mat. Thus, Matsumura teaches forming the thin long fiber mat, which corresponds to the claimed nonwoven gauze, by supplying a carded lap, (a lap is a plurality of fibers which have been compressed),

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opening the lap to individualize the fibers by means of the lickerin, and then air laying the fibers to form the gauze. Matsumura teaches that the fibers of the two layers interpenetrate each other. See col. 2, lines 48-60. With regard to the limitation that the air doffing apparatus has at least one carding element, Matsuura teaches employing carded fibers which are supplied to the air doff machine. It would have been obvious to have formed the carding element and the air doffing apparatus as a single apparatus because it has been held that the use of a one piece construction for a variety of elements would merely be a "matter of obvious engineering choice". In re Larson, 340 F.2d 965, 144 USPQ 347, 349 (CCPA 1965). Additionally, Fehrer teaches that a carding apparatus may be supplied with air streams in order to direct the carded fibers to a collecting surface in order to form the nonwoven fabric. See col. 2, lines 10-15. Fehrer teaches that using the apparatus results in fibers being deposited on the collecting surface with a high uniformity. Therefore, It would have been obvious to have employed the air doffing apparatus having at least one carding element, motivated by the expectation that that this would allow for a uniform distribution of fibers in the nonwoven as taught by Fehrer and also because Matsumura teaches that carded fibers should be supplied to the air doffing apparatus and the use of the Fehrer apparatus would simplify the process by providing an apparatus which both carded the fibers and air-doffed the fibers onto a collecting surface. Matsumura et al differs from the claimed invention because Matsumura et al does not teach the claimed dtex of the fibers. With regard to the claimed dtex, since the dtex of fibers is related to the strength, softness, etc. of the fibers and the resulting product is formed from the fibers, it would have been

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obvious to one of ordinary skill in the art to have selected fibers having a dtex which would produce a product having sufficient strength, softness, etc. With regard to the relative proportions of reinforcing fibers and cellulosic fibers, since the reinforcing fibers serve to strengthen the material, it would have been obvious to one of ordinary skill in the art to have selected the relative proportions of the reinforcing fibers in order to produce a material having the desired strength. Matsumura et al also differs from the claimed invention because Matsumura does not teach that bonding occurs in the absence of a bonding agent but instead employs a binder. Ruffo et al teaches that employing a bonding agent and mechanically interlocking the fibers are both known and equivalent methods of bonding fibrous webs comprising cellulosic fibers and reinforcing fibers. See col. 12, line 61 – col. 13, line 41. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have bonded the fiber web of Matsumura et al by mechanically interlocking the web rather than by using a binder, since Ruffo et al teaches that the two bonding methods are known to be equivalents in the art.

Claims 33-36 are rejected under 35 USC 103(a) as being unpatentable over Matsumura in view of Ruffo and Fehrer as applied to claims above, and further in view of WO 97/45083 to Rosseland. Matsumura does not teach employing HTCMP or flash dried pulp. Rosseland teaches at page 8 that HTCMP and flash dried pulp can be employed to form airlaid nonwovens. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have employed HTCMP and/or flash dried pulp. One of ordinary skill in the art would have been motivated to

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employ such fibers because Rosseland teaches that it is useful in forming nonwoven airlaid fabrics.

(10) Response to Argument

Appellant argues that Matsumura does not teach the claimed gauze and that there is a significant difference between the gauze formed by the apparatus of Matsumura and the gauze formed by air doffing apparatus card. However, Appellant has not provided any evidence in support of this allegation. Claim 1 is a product claim. Matsumura teaches a nonwoven having the nonwoven gauze layer formed from the long fibers and the cellulosic short fiber layer where the short fibers and the gauze are intermixed at the interface of the layers. See col. 2, lines 48-60. Appellant argues that the gauze of Matsumura is different the claimed gauze because a different apparatus is used to form the gauze layer. However, Appellant has not met their burden of proof in showing that the claimed gauze has a different structure due to the different way it is formed. The instant claims do not include any limitations regarding any particular orientation of the fibers in the nonwoven gauze, or any limitations regarding tensile strength, etc. Appellant argues that the difference between gauzes formed from generally aligned (carded) webs versus random (lickerin) webs is significant, but again, Appellant has not offered any evidence in support of this assertion. Appellant argues that Matsumura teaches that carding results in easy delamination of the web at col. 3, lines 24-30. However, at col. 3, Matsumura is referring to the carding method set forth at col. 1, lines which discusses forming layers of long fibers by carding. That is not the method which Matsumura teaches, but rather a background method. The Matsumura

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method employs a carded lap, (a lap is a compressed plurality of fibers), in which the fibers are individualized by the lickerin and fed into the air stream to be formed into the gauze layer. Also, with regard to delamination, Matsumura is referring to the ease by which two separate layers of carded fibers which are laminated can be delaminated. That is not the method taught by Matsumura. Finally, it is noted that the instant claims do not recite any tensile strength or other physical properties which would distinguish it from the web of Matsumura. Similarly, Matsumura at col. 3, lines 23-24 is not referring to the process which is disclosed in Matsumura with regard to the random process, but instead is referring to known prior art processes. As set forth above, Matsumura teaches a method which employs a carded fiber lap which is fed into the lickerin and then the fibers are carried on a air stream and laid onto the forming wire.

Appellant argues that the action is misleading because it suggests that a lickerin is simply part of the card. However, the rejection, as set forth above, is that carded fibers are fed into the lickerin. Appellant argues that the simple use of a lickerin compared to the use of an air-doffing apparatus results in a significantly different gauze. However, again, Appellant has not provided any evidence with regard to this assertion of a significantly different gauze. Also, as noted above, the claims do not include any structural limitations regarding the gauze formed, such as fiber orientation, tensile strength, etc., which would differentiate the claimed gauze from the gauze of Matsumura.

Appellant argues that the action misleads by suggesting that air laying and carding are distinct processes. However, carding is a process by which fibers are

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separated, combed and aligned. Air laying is a process by which a nonwoven fabric is formed by means of distributing the fibers by air currents. The fact that a single apparatus may perform both of these functions does not mean that the two functions or processes are the same. One separates, combs and aligns fibers, another transports fibers and lays them onto a forming wire to form a nonwoven fabric. Carding and airlaying are not the same process, whether or not a single apparatus performs both functions.

Appellant argues that Matsumura does not teach a carded gauze. This is irrelevant as Appellant is not claiming a carded gauze. The instant claims recite an "air-laid non-woven gauzed formed with an air-doffing apparatus card". Appellant has not presented any evidence to show that the gauze formed by Matsumura is different than the claimed gauze. Appellant argues that the fibers in the gauze of Matsumura are randomly laid and not generally aligned. However, the instant claims do not recite any particular alignment of the fibers in the gauze. Appellant has not met the burden of showing that the process differences result in an unobvious difference between the claimed product and prior art product.

Appellant argues the teachings of Fehrer cannot be combined with the teachings of Matsumura because Matsumura specifically teaches that the fibers should be a random webbing and not aligned. However, Appellant has not pointed out where Matsumura teaches this and it is not clear to what fibers Appellant is referring. Matsumura clearly teaches supplying carded fibers to the lickerin. Matsumura clearly uses air streams to entrain the fibers and to pull them onto the forming wire. Fehrer

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teaches a benefit of using the air doffing apparatus card because it deposits the fibers on the forming wire with a high uniformity. Further, Fehrer clearly teaches a single apparatus which supplies carded fibers to the air stream which is what is done in Matsumura. Therefore, it would have been obvious to have employed the air doffing apparatus card of Fehrer in the process of Matsumura, motivated by the teaching of Fehrer that this apparatus deposits the fibers uniformly and also because the Fehrer apparatus makes the process simpler because it is a single apparatus.

Appellant argues that Ruffo does not teach an air doffing apparatus card. However, as set forth above, Fehrer teaches the air doffing apparatus card. Appellant argues that Ruffo does not teach the same material as the claimed gauze because the claimed gauze is made by an air doffing apparatus card. However, as set forth above, Appellant has not provided any evidence to show that the process differences result in an unobvious difference between the claimed invention and the prior art product. Statements that the gauze is different or significantly different are not sufficient to establish that the gauze is in fact different.

Appellant argues that Ruffo does not teach or suggest that the use of a bonding agent and mechanically interlocking the fibers are freely interchangeable. However, the rejection did not state that the methods are freely interchangeable, that the methods were identical or that one skilled in the art would randomly substitute one for the other. Ruffo teaches that mechanical bonding and employing a bonding agent were both known methods of bonding fibrous webs comprising cellulosic fibers and reinforcing fibers. Ruffo does not state that the use of bonding agents and the use of mechanical

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entangling means are the same, i.e., Ruffo does not say that these two means of bonding are identical, but Ruffo clearly teaches that these are all known means of providing integrity to a nonwoven. Therefore, Ruffo teaches the equivalency of the methods. One of ordinary skill in the art therefore, would have been motivated to employ the different means taught by Ruffo to bond the nonwoven of Matsumura, i.e., bonding agents, mechanical bonding, etc. An express teaching of substituting one equivalent means for another is not required. Applicant argues that in Matsumura one skilled in the art has already selected chemical bonding means as being suitable and therefore any modification of this is unobvious. However, Ruffo clearly teaches that both methods can be used. Further, one of ordinary skill in the art would know that employing chemical bonding agents introduces another component into the nonwoven, increases potential sensitivities for users of the final product, increases cost, and may have a deleterious effect on the hand of the nonwoven. Therefore, the motivation to employ a mechanical means of bonding would be to avoid some or all of these potential problems. Of course, the opposite is also true, that employing chemical bonding would produce benefits such as increased strength, avoiding excessive compaction, etc. One of ordinary skill in the art would not be bound by either the teaching of Matsumura or the teaching of Ruffo alone. One of ordinary skill in the art would know that both methods could be used and would have the benefit of both the Matsumura and Ruffo disclosures. One of ordinary skill in the art would know that both methods produce both positive and negative results in the final product. The two methods would clearly have been

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recognized as equivalents in that they both do the same thing, (provide integrity to a nonwoven fabric), with each providing the fabric with different benefits and drawbacks.


With regard to the combination of Matsumura, Ruffo and Fehrer further in view of Rosseland, Appellant argues that Rosseland does not overcome the deficiencies of the combination. Appellant's arguments with regard to the combination of Matsumura, Ruffo and Fehrer are set forth above.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,


Elizabeth M. Cole

Conferees:

Terrel Morris - 

Carol Chaney 